

ENTOMOLOGY.—*Synoptic revision of the testaceipennis group of the beetle genus Phyllophaga.*<sup>1</sup> LAWRENCE W. SAYLOR.

The specific name *testaceipennis* (Blanchard) has long been applied to various species of *Phyllophaga* resembling the true *testaceipennis*, all moderate-sized, semipruinose species with a foveate fifth sternite and *Phytalus*-like cleft claws (which are minutely denticulate beneath) having been combined under this name. The present paper attempts to clarify the taxonomy of this complex. Drawings of the genitalia of the species involved are here presented for the first time.

Six names have been proposed for species known to me that belong in the group, and of these two are here considered as synonyms. Two species are described as new, so that the group, as treated in this paper, comprises six valid species. The following key is based on the male sex; as the females (all except that of *raydoma*, n. sp., are known) are difficult to separate, they will have to be determined primarily by association with the males.

- 1. First two segments of hind tarsus of nearly equal length; elytral hair dense and very obvious, though short, and of nearly uniform length; fifth sternite not foveate; prothorax entirely and evenly punctate, with short, erect, obvious hair of uniform length (Fig. 6a, g). Guatemala.....  
.....*pubicollis* (Blanchard)
- First segment of hind tarsus very noticeably shorter than the second; elytral hairs variable but elytra never densely covered with short hairs; fifth sternite distinctly foveate or at least noticeably impressed apically; prothorax variably punctate but unevenly so, and middisk often irregularly impunctate, the hairs of variable length or lacking..... 2
- 2. Fifth sternite densely punctate but distinctly not foveate apically, at most slightly transversely impressed; apex of fifth sternite straight and not at all emarginate..... 3
- Fifth sternite densely punctate and very noticeably foveate, midapex distinctly and usually broadly and arcuately emarginate... 4
- 3. Prothorax strongly shining, rufous, and glabrous or apparently so, the front angles sharp and subrectangular; antennal club slightly longer than funicle (Fig. 5a, b). British Honduras.....*bowditchi* Saylor

- Prothorax subpruinose, rufocastaneous, and with short hairs and some longer hairs intermixed, front angles obtuse and not particularly noticeable; antennal club distinctly longer than funicle and subequal to entire stem (Fig. 1a, b). Guatemala.....  
.....*raydoma*, n. sp.
- 4. Prothorax with hairs minute and hardly noticeable, without longer hairs; color dorsally distinctly pruinose (Fig. 3a, b, f). Panama, Venezuela.....*odomi*, n. sp.
- Prothorax always with noticeable hairs, these usually short, with intermixed longer hairs; color variable, either strongly shining or pruinose..... 5
- 5. Color always very distinctly and very strongly shining, thorax deep rufous; elytra coarsely and rugosely punctate and without obvious striae (Fig. 4a). Costa Rica.....  
.....*sanjosicola* Saylor
- Color highly variable but always evidently pruinose, thorax at most castaneorufous; elytra less rugosely punctured and usually with distinct striae (Fig. 2a-e). Mexico to Panama.....*testaceipennis* (Blanchard)

**Phyllophaga (*Phyllophaga*) *testaceipennis* (Blanchard)**

Fig. 2, a-e

*Ancylonycha testaceipennis* Blanchard, Cat. Col. 1: 134. 1850.

*Lachnosterna testaceipennis* (Blanchard) Bates, Biol. Cent.-Amer. 2(2): 195. 1888.

*Male*: Form oblong-oval, wider behind. Color testaceous to rufotestaceous, varying to rufocastaneous or castaneopiceous, the thorax usually more rufous; above slightly to markedly pruinose, dorsal hair variable. Head with front convex, coarsely, rugosely and closely punctate with short erect hairs. Clypeus transverse, disk sparsely to moderately punctured, at times with smooth areas near the hardly impressed and faintly biarcuate suture; apex somewhat reflexed and hardly or not emarginate, the angles and sides not reflexed and the lateral angles so broadly rounded as to make the clypeal shape semiarculate. Antenna variable, 9- or 10-segmented, usually the latter; the club small and thick and usually a little longer than, or subequal to, the funicle. Thorax with sides straight before the submedian, obtuse lateral dilation, and faintly emarginate behind it, the angles distinct but very obtuse; disk smooth, the punctures irregularly placed and separated

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by 1 to 3 times their diameters, sparser at center disk, which often possesses an irregular impunctate area; all punctures with short erect hairs and a moderate number of intermixed much longer hairs, the discal surface at least partly pruinose. Scutellum impunctate. Elytral punctures more regularly placed and separated by  $1\frac{1}{2}$  to 3 times their diameters, with short suberect hairs and some longer ones intercalated, especially near suture and base; striae variable, usually irregular but obvious, the sutural striae strong. Pygidium convex, polished or semipruinose, the surface frequently slightly wrinkled, and the punctures sparse and separated by two to four times their diameters, with short suberect hairs; apex well rounded and ciliate. Abdomen polished and subflattened at middle, and the sutures obliterated between sternites 2 to 5, the disk very sparsely, finely, and setigerously punctate, the hairs short and suberect; fifth sternite with a large median patch of about three dozen granules, the apical half of segment foveate and the center apex appearing widely and somewhat deeply emarginate; sixth sternite nearly as long as fifth, flattened, sparsely set with fine granules and long erect hairs, and the middle disk with a distinctly impressed longitudinal sulcus. Claws very short and rounded, appearing narrowly cleft very much as in *Phytalus*; the middle tooth as long as the apical but twice as wide through its middle part, its apex reflexed basally; basal dilation obtuse and the surface between it and basal tooth minutely denticulate. Segments 1-4 of anterior tarsus each with a small though distinct spine on the inner apical angle. Hind spurs free, spinose, the longest a little longer than first tarsal segment; first tarsal segment only three-fifths the length of the second.

*Female*: Similar to male except: Antennal club shorter than funicle; pygidium distinctly narrowed and pointed at center apex, and reflexed slightly into a sharp tumosity, the margin hardly thickened, but the surface below the "point" and on the underside of the pygidium very wide and smooth, the disk with very short erect hairs; fifth sternite plane, hardly different from the fourth; sixth sternite convex and irregularly punctate, the center discal area impunctate; claws slightly longer and very distinctly more widely cleft (see Fig. 2e). Length 13-16 mm.

Described from Mexico, this is an extremely common and widespread species, ranging from Mexico to Panama. Since the original description of half a dozen lines is so inadequate the species is here described in some detail. Most closely related to *sanjosicola* Saylor and *odomi* Saylor, this species is readily separated by the key characters and the form of the male genitalia.

**Phyllophaga (*Phyllophaga*) bowditchi**  
Saylor

Fig. 5, a-b

*Phyllophaga* (*Phyllophaga*) *bowditchi* Saylor,  
Proc. Biol. Soc. Washington 51: 189-190.  
1938.

This species is known to me only through the type series from "M-tee District of British Honduras, March." It most closely resembles *raydoma* Saylor of this species-complex, but the two species are noticeably different in all views of the male genitalia, as well as in the external characters noted in the key.

**Phyllophaga (*Phyllophaga*) raydoma**, n. sp.

Fig. 6, a, b

*Male*: Similar to *testaceipennis* (Blanchard) in most respects, differing only as follows: Antenna 10-segmented, the club long and subequal to the entire stem in length; scutellum very sparsely punctate; fifth abdominal sternite nearly flat, only faintly impressed apically and not at all foveate; first hind tarsal segment only one-half the length of the second; and the genitalia are different (see Fig. 1, a-c). Length 14 mm. Width 7.5 mm.

The unique male holotype in the Saylor collection is from "Alta Vera Paz, Guatemala." The species differs mainly from *testaceipennis* in characters of the antennal club, the fifth abdominal sternite, and the male genitalia.

**Phyllophaga (*Phyllophaga*) odomi**, n. sp.

Fig. 3, a, b, f

*Male*: Color rufotestaceous to rufocastaneous or rufopiceous, the thorax and head usually rufous or darker than the elytra; surface distinctly pruinose; dorsal surface variably hairy. Very similar in nearly all respects to *testaceipennis* except as follows: Clypeus at times more densely punctate and semitrapezoidal; thoracic hairs always *minute* and hardly or barely visible, *without* any longer intercalated hairs; elytral hairs also *minute*, with several short hairs

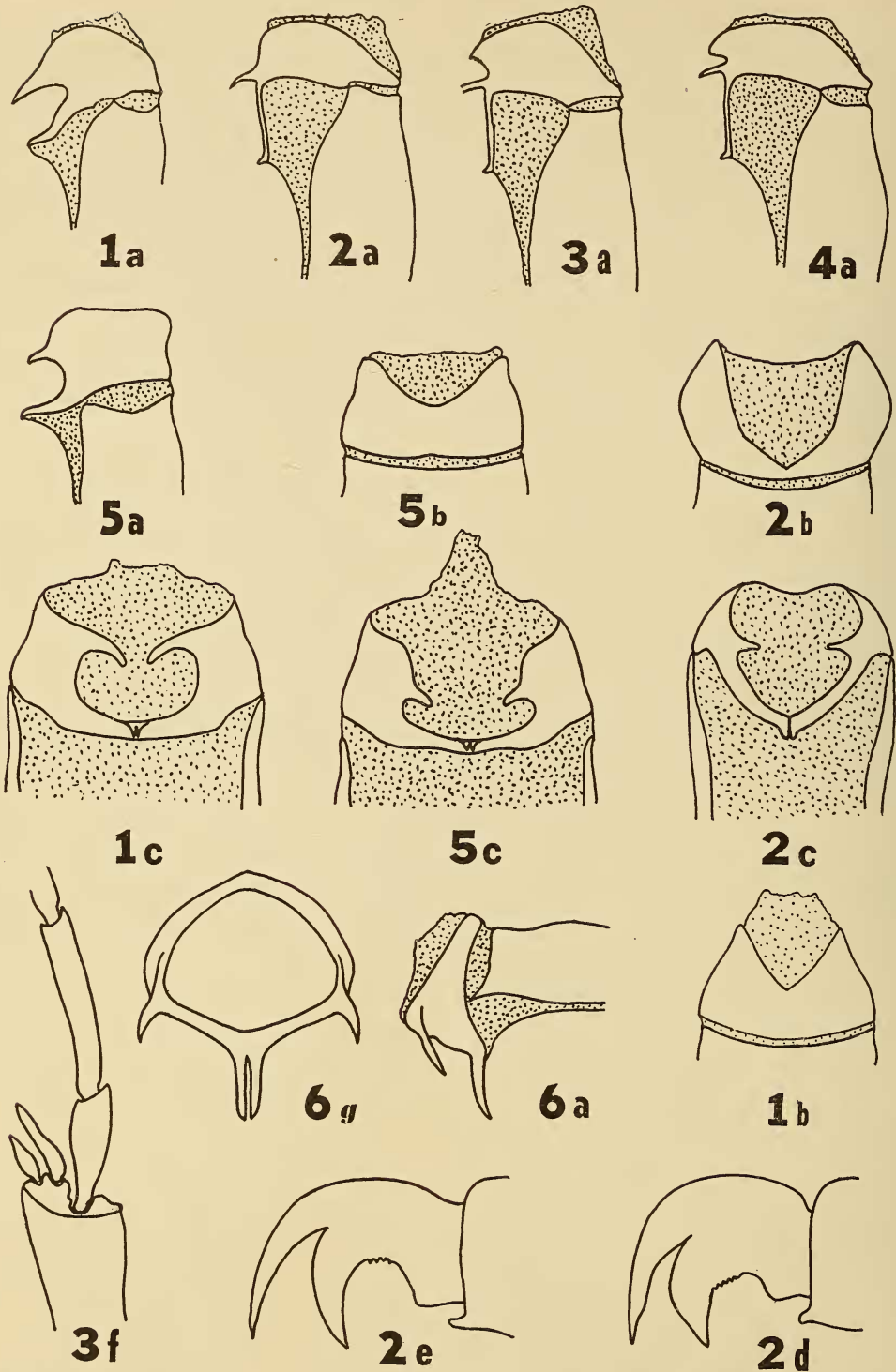


Fig. 1.—*Phyllophaga raydoma*, n. sp. Fig. 2.—*Phyllophaga testaceipennis* (Blanchard). Fig. 3.—*Phyllophaga odomi*, n. sp. Fig. 4.—*Phyllophaga sanjosi-ola* Saylor. Fig. 5.—*Phyllophaga bowditchi* Saylor. Fig. 6.—*Phyllophaga pubicollis* (Blanchard).  
 a, Lateral view of male genitalia; b, dorsal view of male genitalia; c, ventral view of male genitalia; d, front male claw; e, front female claw; f, ventral view of hind leg of male; g, en-face view of male genitalia.

adjoining the scutellum; genitalic form related to that of *testaceipennis*, but different, especially in lateral view (see Fig. 3, a).

*Female*: Similar to female of *testaceipennis* except that the thoracic hairs are all minute and hardly visible (in one female example of *odomi* about half a dozen long hairs are visible just before the midapex but the entire disk is minutely haired). Length 15–17 mm. Width 7–9 mm.

The male holotype is from "Madden Dam, Canal Zone, Panama, collected at light V-18-36 by M. M. Saylor"; the female allotype and several male and female paratypes are from "Los Canales, Kaiguata, Venezuela, VII-24-39, Vivas-Berthier Collector." An additional paratype is from "Caracas, Venezuela, D. F., VI-5-32." All are in the Saylor collection. I take pleasure in naming this handsome species for my close friend and collecting companion C. Ray Odom, of Virginia. *P. odomi* differs mainly from *testaceipennis* in the thoracic vestiture, larger size, and the slightly different male genitalia (which in lateral view appear to overhang slightly the upper tooth, but not so much as in *sanjosicola* Saylor).

**Phyllophaga (Phyllophaga) sanjosicola** Saylor  
Fig. 4, a

*Phyllophaga sanjosicola* Saylor, Rev. Ent. 5(4): 500. 1935.

*Phytalus valeriana* Saylor, Pomona Coll. Journ. Ent. Zool., Dec. 1934.

Known as yet only from the type series, all the specimens of which were collected "at light, San José, Costa Rica, May, 1,000–1,200 m." This series is divided between the Saylor collection and the Nevermann collection, which is now in the United States National Museum. The slightly larger size, distinctive shining, and more coarsely punctate surface will readily separate the species from *testaceipennis*, as will also the male genitalia (uppermost portion of *testaceipennis* genitalia in lateral view evenly rounded above the upper tooth, whereas in *sanjosicola* the uppermost portion very markedly overhanging the upper tooth).

**Phyllophaga (Phyllophaga) pubicollis**  
(Blanchard)

Fig. 6, a–g

*Phytalus pubicollis* Blanchard, Cat. Col. 1: 131. 1850.

*Phytalus (?) pubicollis* Blanchard, Bates, Biol. Cent.-Amer. 2(2): 126, 400. 1888.

*Lachnosterna heynei* Moser, Stett. Ent. Zeit., 1918: 164. (New synonymy.)

*Male*: Elongate, subparallel; color rufocastaneous and shining, the thorax and head shining rufous, above densely haired. Clypeus moderately long, the disk flat, sparsely and coarsely punctate, smooth near middle: apex subtruncate, unemarginate, and slightly reflexed, the angles very broadly rounded. Head with the front slightly convex, densely, coarsely and entirely punctate, with erect hairs of moderate length. Antenna 10-segmented, unicolorous castaneous, the club long and subequal to the entire stem. Thorax with the sides evenly arcuate and hardly dilated at middle, the margin entire and ciliate; angles very obtuse and not well marked; disk evenly and entirely punctured, the punctures separated by one and one-half to twice their diameters, with suberect short hairs, and many intermixed erect hairs of moderate length. Scutellum sparsely and setigerously punctured. Elytra punctate as thorax, with dense, short, semierect hairs and a few longer hairs near base; striae faintly indicated. Pygidium polished, convex, the disk coarsely and moderately densely punctate, with short suberect hairs and sparse, erect longer hairs, the apex subrounded, narrowed and slightly reflexed. Abdomen polished, faintly concave at middle, very sparsely and finely punctate and with short hairs (densely and more closely punctate at sides), and the sutures of sternites 2–5 effaced at middle; fifth sternite flattened, densely and coarsely punctate at middle, with a few small procumbent hairs; sixth nearly as long as preceding and transversely impressed, the disk finely and setigerously punctate and without any longitudinal sulcus, the hairs on disk long but nearly procumbent. Claws very short and cleft as in *testaceipennis* but the upper (i.e., closest to base) tooth  $2\frac{1}{2}$  times as wide at base as the apical tooth. Hind spurs free and very graceful; the first two hind tarsal segments subequal and the second only faintly the longest. Front tarsi slightly spinose on inner apical angles.

*Female*: Differs from male as follows: Antennal club subequal to funicle; pygidium small, plane, sparsely and not coarsely punctate, with short suberect hairs, the apex subrounded and narrowed and the apical fourth of disc some-

what smooth; abdomen semiconvex, the fifth sternites plane, and coarsely, densely punctate, the sixth convex and similarly punctate; claws distinctly more widely cleft; first segment of hind tarsus distinctly shorter than the second. Length 12.5 to 13 mm. Width 6-7 mm.

I have specimens from "Coban, Vera Paz, Guatemala, Conradt collector" (*Biologia material*), and also from "Alta Vera Paz, Guatemala." The species was very inadequately de-

scribed from Mexico by Blanchard, who placed it in *Phytalus* because of the cleft claws; however, the female claws are so widely cleft that the species cannot be included there. As indicated in the key the species is abundantly different from the others in the group but appears to belong with them in most general characters. Bates first placed the species in *Phytalus* and later removed it to *Lachnosterna* in the *Biologia Supplement*.

## PROCEEDINGS OF THE ACADEMY AND AFFILIATED SOCIETIES

### THE ACADEMY

#### 45TH ANNUAL MEETING OF THE ACADEMY

The 45th annual meeting of the ACADEMY was held in the Assembly Hall of the Cosmos Club on January 21, 1943. President CURTIS called the meeting to order at 8:15 P.M., with about 80 persons present. The minutes of the 44th annual meeting were approved as published on pages 85 to 91 of the JOURNAL of March 15, 1942. The reports of the several officers and of the Committees of Auditors and Tellers were read and accepted, as follows:

#### *Report of the Secretary*

During the past year, 23 new members (14 resident and 9 nonresident) were taken into the ACADEMY. Three of the new nonresident memberships were in the honorary class. The new members were distributed among the various sciences as follows: 3 each in bacteriology and physics, 2 each in astronomy, chemistry, and geology, and 1 each in agronomy, anthropology, archeology, biochemistry, botany, geochemistry, geography, hydraulics, physiology, plant pathology, and plant physiology.

Because of retirement from active practice of their profession, 10 members (7 resident and 3 nonresident) were placed on the retired list. Resignations were accepted from 11 members in good standing (9 resident and 2 nonresident).

The deaths of 17 members (8 resident and 9 nonresident) were reported, as follows:

- THOMAS HERBERT NORTON, White Plains, N. Y., December 2, 1941.  
 CLINTON HART MERRIAM, Berkeley, Calif., March 20, 1942.  
 WALTER FORD REYNOLDS, Baltimore, Md., May 1, 1942.  
 EDWARD CENTER GROESBECK, Washington, D. C., May 9, 1942.  
 SIR JOSEPH LARMOR, Cambridge, England, May 19, 1942.  
 MARCUS WARD LYON, JR., South Bend, Ind., May 19, 1942.  
 HENRY GRANGER KNIGHT, Washington, D. C., June 13, 1942.  
 ANDREW STEWART, Washington, D. C., June 28, 1942.

HARRY JOHN McNICHOLAS, Washington, D. C., July 23, 1942.

THOMAS LEONARD WALKER, Toronto, Canada, August 6, 1942.

HENRY CORBIN FULLER, Washington, D. C., August 26, 1942.

ALFRED NELSON FINN, Lincoln, Nebr., September 21, 1942.

WILLIAM EDWARD PARKER, Fort Lauderdale, Fla., September 30, 1942.

ROBERT WILCOX SAYLES, Chestnut Hill, Mass., October 23, 1942.

CHARLES SCHUCHERT, New Haven, Conn., November 20, 1942.

HERMAN STABLER, Washington, D. C., November 24, 1942.

JAMES EDMUND IVES, Washington, D. C., January 1, 1943.

On January 20, 1943, the status of the membership was as follows:

|             | Regular | Retired | Honorary | Patrons | Total |
|-------------|---------|---------|----------|---------|-------|
| Resident    | 423     | 37      | 3        | 0       | 463   |
| Nonresident | 132     | 20      | 15       | 2       | 169   |
| Total       | 555     | 57      | 18       | 2       | 632   |

The net changes in membership during the past year are as follows:

|             | Regular | Retired | Honorary | Patrons | Total |
|-------------|---------|---------|----------|---------|-------|
| Resident    | -10     | 4       | 0        | 0       | -6    |
| Nonresident | 5       | 2       | 2        | 0       | 9     |
| Total       | -5      | 6       | 2        | 0       | 3     |

From February 6, 1942, to January 11, 1943, the Board of Managers held eight meetings, with an average attendance of 19 persons. Two special committees held over from 1941 completed their work. Of the 10 special committees appointed by the president during the past year, 8 have completed their work.

During the past year, the Academy held six meetings, beginning with the 310th and ending with the 315th as follows:

On February 19, 1942, jointly with the Anthropological Society of Washington, with an address entitled *The Aztecs of Mexico* by GEORGE C. VAILLANT, director of the Museum of the University of Pennsylvania.